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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/987,010

11/13/2001

Tetsuyoshi Inoue

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6384

7590

06/17/2004

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EXAMINER

NGUYEN, TUAN N

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Applicati n N .</b>	<b>Applicant(s)</b>	
	09/987,010	INOUE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tuan N Nguyen	2828	

**-- Th MAILING DATE of this communication appears on th cover she t with the correspondence address --**

**Period f r Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***DETAIL ACTION***

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of 35 U.S.C. 102(e) which forms the basis for all obviousness rejections set forth in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1, 5 are rejected under 35 U.S.C. 102(e) as being unpatentable over Kotato et al. (US 6099678).

Kotato et al. '678 shows in figures 1, 5, 7, 9-11 and discloses a manufacturing method for a semiconductor laser device in which semiconductor chip is mounted on a base portion by using an electrically conductive die-bond paste including metal filler such as silver (Col 1: 37, 65) (Col 2: 42), by applying die-bond paste onto the base, mounting the semiconductor onto the base portion, temporary curing the die-bond paste while the semiconductor chip is kept pressurized toward the base portion (Col 2: 60-67) (Col 3: 1-12), and finally curing the conductive die-bond paste (Col 4: 6-19) (Col 6: 27-67) (Col 7: 1-10).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2828

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

4. Claim 2, 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kotato et al. (US 6099678) in view of Inaba (US 6255742).

With respect to claims 2, 6 Kotato '678 discloses the above and further discloses the temperature use in curing of the bond and semiconductor (Tables 1, 5, 6), the claims 2 and 6 further discloses the thermal resistance of semiconductor laser device is  $90^{\circ}\text{C/W}$  or lower and the content ration of silver in die-bond paste is 82%-84%. Inaba '742 shows in (Fig 9a-d: 1,2,19; Fig 11b:20, 7) a semiconductor laser device having semiconductor laser chip mounted on a based portion using electrically conductive die-bond paste (Col 8: 62-67), where thermal resistance of semiconductor device is about  $30^{\circ}\text{C/W}$  (Col 7: TABLE 1). Also, Inaba '742 discloses the amount of die-bond surface of semiconductor laser chip (Col 8: 62-67; Col 0-60). It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

### **Allowable Subject Matter**

Claims 3, 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, since the prior art of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed *wherein creep-up height of the conductive die-bond paste at a side face of the semiconductor laser chip from a die-bond surface of the semiconductor laser chip is not more than 40um; or wherein the conductive die-bond paste interposed between a die-bond surface of the semiconductor laser chip and the base portion is 5um or lower.*

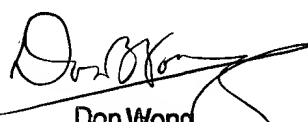
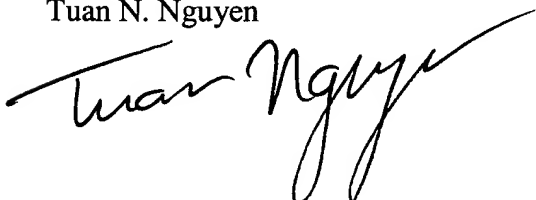
### **Communication Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen



Don Wong  
Supervisory Patent Examiner  
Technology Center 2800